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MYCOLOGIA

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ILLUSTRATIONS OF FUNGI—V

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Most of the species here figured belong to the Gasteromycetes. The illustrations were made from specimens collected in or near Bronx Park, New York City. The three species of *Leotia*, belonging to the Discomycetes, were found at Chappaqua, New York. The descriptions of these three species are mainly drawn from Durand's excellent monograph of the Geoglossaceae of North America.

Leotia lubrica (Scop.) Pers.

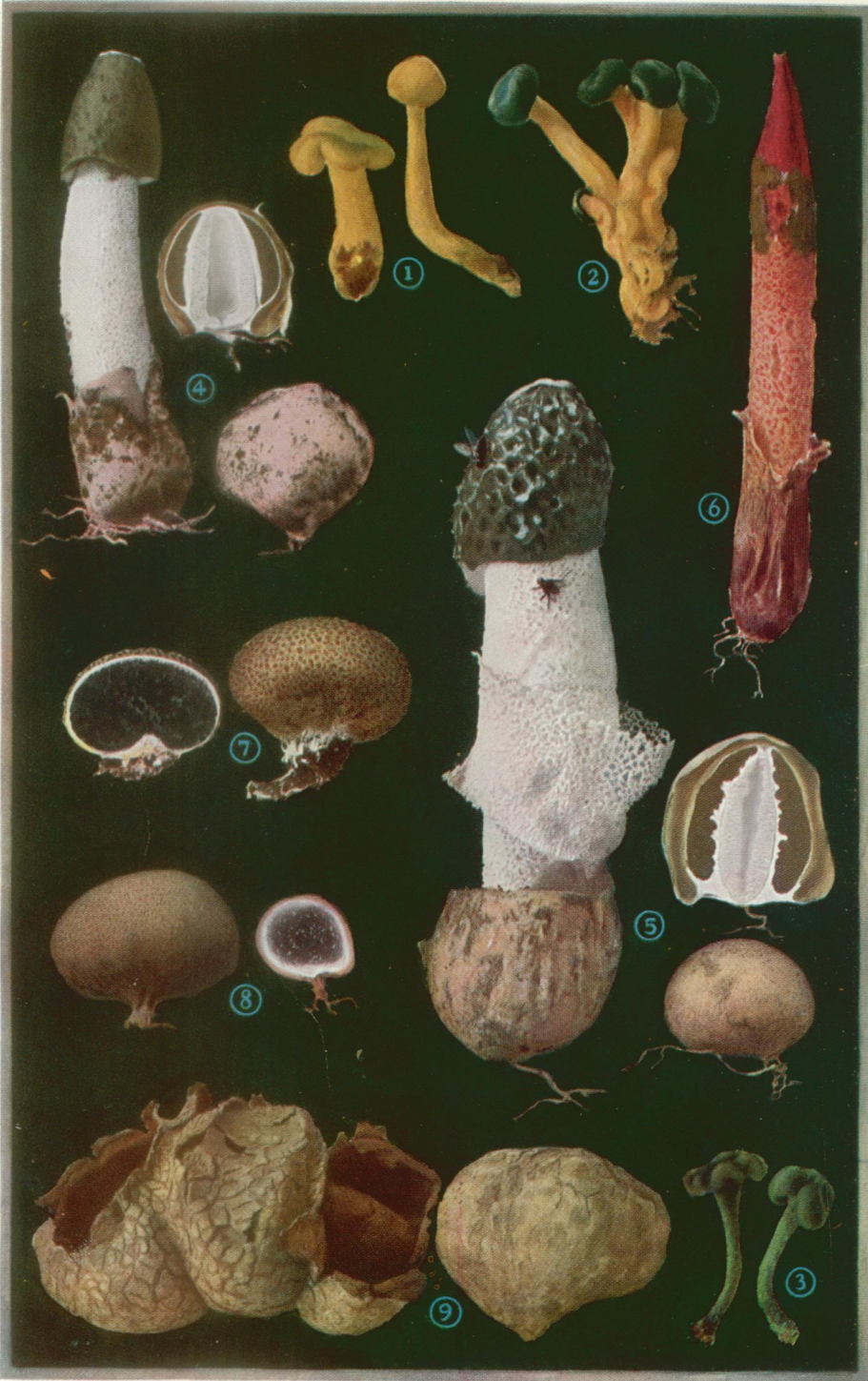
YELLOW LEOTIA

Plate 17. Figure 1. $\times 1$

Plants usually densely clustered, more or less viscid-gelatinous, ochraceous-yellow, often with a greenish or olive tint, especially with age or on partial drying, 3–6 cm. or more high; ascigerous portion pileate, convex above, the surface often irregularly furrowed, with a recurved margin, wrinkled or nodulose, 1–1.5 cm. broad: stem terete or somewhat compressed, usually slightly tapering upward, the adjacent ones often coalescing below, about 1 cm. thick below, 0.5 cm. thick above, minutely squamulose, sometimes with innate greenish granules; asci narrowly clavate, $130\text{--}160 \times 10\text{--}12 \mu$; spores 8, hyaline, smooth, subfusiform, $18\text{--}28 \times 5\text{--}6 \mu$, becoming 5–7-septate; paraphyses filiform, branched, hyaline.

This species, said to be edible, is the commonest member of the Geoglossaceae in the eastern United States, occurring on rich humus or sandy soil in woods from Ontario to Alabama and west to Iowa. It is very variable in color and consistency, being

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ILLUSTRATIONS OF FUNGI

sensitive to differences in situation, moisture, and substratum. Several of its forms have received specific names.

***Leotia stipitata* (Bosc) Schroet.**

TWO-COLORED LEOTIA

Plate 17. Figure 2. $\times 1$

Plants solitary or clustered, viscid-gelatinous, 3–6 cm. or more high; ascigerous portion 1–2 cm. or more broad, margin incurved toward the stem, even or irregularly nodulose, hymenium deep æruginous-green, whitish below: stem terete or slightly tapering upward, white or pale-ochroleucous, 2–4 cm. high, 0.5–1 cm. thick, often beset with minute green squamules: asci narrowly clavate-cylindrical, $118\text{--}150 \times 10\mu$; spores 8, hyaline, smooth, becoming 5 or more septate, $16\text{--}28 \times 5\text{--}6\mu$; paraphyses filiform, branched, the apices intensely green when fresh.

This species occurs in rich humus or soil in woods from Maine to Florida and west to California. Its colors are constant under all conditions, and it does not intergrade with other species. The dark bluish-green cap and pale-yellow or white stem form a very striking contrast and easily distinguish it from the two other species.

***Leotia chlorocephala* Schw.**

GREEN LEOTIA

Plate 17. Figure 3. $\times 1$

Plants solitary to densely clustered, subgelatinous, entirely green, 1–5 cm. high; ascigerous portion hemispherical, convex, margin incurved, obtuse, hymenium smooth or furrowed, the margin often lobed or nodulose, pea-green to æruginous, 2–10 mm. wide; stem terete, firm, the middle layer green, surface densely squamose or furfuraceous with green granules, 1–4.5 cm. high, 2–4 mm. thick, changing little in color on drying: asci narrowly clavate, $125\text{--}150 \times 10\text{--}12\mu$; spores 8, hyaline or faintly greenish, narrowly ellipsoid, becoming about 5-septate, $18\text{--}20 \times 5\text{--}6\mu$; paraphyses filiform, branched, the apices green.

This plant is entirely green and opaque, with furfuraceous stem. The name assigned it by Schweinitz has caused some confusion because it applies better to *L. stipitata*, which is "green-headed." It occurs on sandy soil in rich woods or among mosses in ravines from New Hampshire to Alabama.

Dictyophora Ravenelii (Berk. & Curt.) Burt

SAWDUST STINKHORN

Plate 17. Figure 4. $\times \frac{1}{2}$

Pileus conic-campanulate, 2.5–3.5 cm. long, the surface white and granulate or minutely wrinkled after the disappearance of the olivaceous gleba; apex smooth, white, umbilicate, closed by a thin membrane or at length perforate; spores oblong-ellipsoid, $4-5 \times 2 \mu$, involved in mucus; stipe cylindric, slender, tapering at each end, cellular-spongy, white, hollow, 10–12 cm. high, 2 cm. thick; veil membranous, usually scarcely half the length of the pileus and concealed beneath it, very rarely protruding; volva ovoid, pinkish, 4–5 cm. in diameter, containing the lower half of the veil attached about the base of the stipe.

This species occurs in abundance in old sawdust piles and about rotting logs and stumps in woods and fields in the eastern United States and Canada. It may be readily distinguished from the veiled stinkhorn by the absence of a conspicuous, reticulate veil; its cap is also smooth instead of coarsely pitted, and its odor is less penetrating and disagreeable.

Dictyophora duplicata (Bosc) Ed. Fisch.

VEILED STINKHORN

Plate 17. Figure 5. $\times \frac{3}{4}$

Pileus campanulate, 5 cm. long, the surface appearing strongly reticulate-pitted after the fetid, olivaceous gleba has been devoured by flies or washed away by rains; apex truncate, perforate; spores oblong-ellipsoid, $4 \times 2 \mu$, involved in mucus at maturity; stipe fusiform-cylindric, tapering at each end, cellular-spongy, white, hollow, 10–20 cm. high, 2.5–3 cm. thick; veil white, reticulate, variable in length, sometimes much expanded, always conspicuous, fragile; volva globose, nearly white, very poisonous, 5–7 cm. in diameter.

This very conspicuous and objectionable species occurs in the United States about buildings and near stumps in fields and in the edges of woods. It may be easily recognized by its conspicuous veil, which is attached near the apex beneath the pileus and hangs down to the middle of the stipe or lower. The mature gleba is extremely fetid, proving attractive to flies, which probably disseminate the spores. *Ithyphallus impudicus* (L.) Ed.

Fisch., another very fetid stinkhorn, abundant in Europe and reported rarely in this country, has no veil of any kind, although its pileus is reticulated similarly to that of the veiled stinkhorn. Both of these species may be exterminated in lawns and groves by the use of quick-lime, as described in MYCOLOGIA for March, 1909.

Mutinus elegans (Mont.) Ed. Fisch.

HEADLESS STINKHORN

Plate 17. Figure 6. $\times \frac{1}{2}$

Stipe horn-shaped, cylindric, tapering gradually to the apex, pitted, hollow, white or pinkish below, bright-red or orange above, 10–17 cm. long, about 2 cm. thick; apex conic-acuminate, perforate; gleba greenish-brown, semifluid, fetid, smeared over the upper portion of the stipe in an indefinite manner; spores oblong-ellipsoid, $4-5 \times 2 \mu$; veil none; volva oblong-ovoid, pinkish, 2.5–3 cm. long.

This species is very conspicuous by reason of its size and brilliant coloring. It occurs rather commonly in the United States in rich cultivated grounds or woods. A smaller species, *Mutinus caninus* (Huds.) Fries, found rarely in the eastern United States and also in Europe, may be readily distinguished by its more distinct pileus and very faint odor. Both species readily lose the greenish slime containing the spores, since this is eagerly devoured by flies and easily washed away by light rains.

Scleroderma aurantium (L.) Pers.

COMMON SCLERODERMA. HARD-SKINNED PUFFBALL

Plate 17. Figure 7. $\times \frac{1}{2}$

Peridium depressed-globose, subsessile, radicate, often cespitose, 2.5–8 cm. in diameter, thick, corky, usually pale with yellow shades, or orange, sometimes brown, mostly covered with large warts; gleba at first white, then vinaceous to bluish-black, finally greenish-gray, lines of trama whitish; spores dark, globose, warted, $7-12 \mu$.

A very common and widely distributed species growing in dry woods, especially under chestnut trees. I have eaten the young sporophores, but do not consider them attractive. Persons have

brought them to me thinking they were truffles. In section, and in the method of disseminating its spores, this species closely resembles the preceding one.

***Scleroderma verrucosum* (Bull.) Pers.**

SMALL-WARTED SCLERODERMA

Plate 17. Figure 8. $\times \frac{3}{4}$

Peridium subglobose, 2.5–7 cm. in diameter, ochraceous, purplish or dingy-brown, thin and fragile above, covered with minute warts, continued below into a more or less elongated stem-like base, sometimes reaching 3 cm. or more in length, when it is usually lacunose; gleba white, then vinaceous to black, at length umbrinous, lines of trama whitish; spores globose, warted, dark, 8–13 μ .

This species is neither so common nor so well known as the following species, from which it differs in having much smaller warts. It is also usually of smaller size in this region and often more purplish or brownish in color. It occurs on sandy ground and roadsides in woods, and is of wide distribution. A section of the young sporophore shows a broad white border, with a firm, wine-colored to black interior marked with whitish lines. This mass later becomes umbrinous and powdery and escapes through the rupture of the upper portion of the peridium.

***Scleroderma Geaster* Fries**

STELLATE SCLERODERMA

Plate 17. Figure 9. $\times \frac{1}{2}$

Peridium large, globose, sessile, often cespitose, thick, nearly smooth, yellowish-brown or greenish-brown, splitting at maturity in a stellate manner at the apex, reminding one of an earth-star; gleba umbrinous with a purple tinge, trama whitish; spores globose, coarsely warted, 12–16 μ in diameter.

This large, dull-colored species is quite abundant in the eastern United States on banks and roadsides and in short grass in thin woods. It is usually half imbedded in the earth and this fact together with its dull colors render it inconspicuous until maturity. It often much resembles a potato that has been exposed

to the light and has become somewhat greenish. The splitting of the upper portion into lobes is quite characteristic. An earth-star splits in this way more completely and regularly and has in addition an inner peridium containing the spore-mass.